Remarks

Claims 22-31 are at issue. Claims 22-31 stand rejected under 35 USC § 103 (a), as being unpatentable over Naik et al. (5548647) in view of Higgins (5339385).

The applicants respectfully disagree with the Examiner. A decision is defined as "to decide" or a "conclusion". The definition of decide is a "solution that ends uncertainty." Webester's New Collegiate Dictionary. Claim 22 clearly requires a plurality of preliminary decisions. By the definition above this means a number of yes/no or true/false decisions for each test utterance. Step (d) requires that the preliminary decisions be combined to form a verification decision. Neither Naik et al or Higgins show a plurality of preliminary decisions. Neither Naik et al or Higgins show combining these decisions. For a further explanation, see the discussion below. This argument also applies to independent claim 29. Both independent claims 22 & 29 are allowable over the prior art.

Claim 22 requires comparing the test utterances to the training utterances to form a preliminary decision. This is a non-parametric process. A decision is a binary result - yes or no. This is not shown in the prior art. The Examiner points to Higgins, col. 4, lines 51-62. Higgins suggests a parametric measurement over the phrase. Where the claimed speaker's distance $d_{T,R}$ is compared to reference speakers distance $d_{T,E}$. This would defeat the whole purpose of the invention and teaches away from the invention. As stated in the specification pages 6-7, lines 24-26 & 1-7, not all utterances provide equal reliability. Thus, if the input phrase is "one", "three", "five", the prior art would parametrically add the "distance" to find $d_{T,R}$ and $d_{T,E}$. However, if the utterance "one" is twice as reliable an indicator as "five" the prior art does not account for this. In addition, the prior art does not make a decision (non-parametric) for "one", "three", "five" and then combine these preliminary decisions to form a final answer. Clearly claim 22 is allowable over the prior art.

Claim 23 requires weighting each preliminary decision. Clearly the prior art does not have preliminary decisions, so it does not weight the decisions. Claim 23 is allowable over the prior art.

Claims 24 & 25 depend from claim 23 and are allowable for the same reasons.

Claim 26 requires separating speakers into male and female speakers. The Examiner states that Naik et al separate the speakers into male and female speakers. This is true, however, the claim also requires a "male variance vector". This is not shown in the prior art. Claim 26 is allowable over the prior art.

Claims 27 & 28 depend from claim 26 and are allowable for the same reasons.

Claim 29 requires comparing the test utterances to the training utterances to form a preliminary decision. This is a non-parametric process. A decision is a binary result yes or no. This is not shown in the prior art. The Examiner points to Higgins, col. 4, lines 51-62. Higgins suggests a parametric measurement over the phrase. Where the claimed speaker's distance $d_{T,R}$ is compared to reference speakers distance $d_{T,E}$. This would defeat the whole purpose of the invention and teaches away from the invention. As stated in the specification pages 6-7, lines 24-26 & 1-7, not all utterances provide equal reliability. Thus, if the input phrase is "one", "three", "five", the prior art would parametrically add the "distance" to find $d_{T,R}$ and $d_{T,E}$. However, if the utterance "one" is twice as reliable an indicator as "five" the prior art does not account for this. In addition, the prior art does not make a decision (non-parametric) for "one", "three", "five" and then combine these preliminary decisions to form a final answer. Clearly claim 29 is allowable over the prior art. In addition claim 29 requires determining if a speaker is a male as part of the verification process. This is not shown in Naik et al.

Claim 30 requires forming preliminary decisions. This is a non-parametric process. A decision is a binary result yes or no. This is not shown in the prior art. The Examiner points to Higgins, col. 4, lines 51-62. Higgins suggests a parametric measurement over the phrase. Where the claimed speaker's distance $d_{T,R}$ is compared to reference speakers distance $d_{T,E}$. This would defeat the whole purpose of the invention and teaches away from the invention. As

stated in the specification pages 6-7, lines 24-26 & 1-7, not all utterances provide equal reliability. Thus, if the input phrase is "one", "three", "five", the prior art would parametrically add the "distance" to find $d_{T,R}$ and $d_{T,E}$. However, if the utterance "one" is twice as reliable an indicator as "five" the prior art does not account for this. In addition, the prior art does not make a decision (non-parametric) for "one", "three", "five" and then combine these preliminary decisions to form a final answer. Clearly claim 30 is allowable over the prior art.

Claim 31 requires comparing the test utterances to the training utterances to form a preliminary decision. This is a non-parametric process. A decision is a binary result yes or no. This is not shown in the prior art. The Examiner points to Higgins, col. 4, lines 51-62. Higgins suggests a parametric measurement over the phrase. Where the claimed speaker's distance $d_{T,R}$ is compared to reference speakers distance $d_{T,E}$. This would defeat the whole purpose of the invention and teaches away from the invention. As stated in the specification pages 6-7, lines 24-26 & 1-7, not all utterances provide equal reliability. Thus, if the input phrase is "one", "three", "five", the prior art would parametrically add the "distance" to find $d_{T,R}$ and $d_{T,E}$. However, if the utterance "one" is twice as reliable an indicator as "five" the prior art does not account for this. In addition, the prior art does not make a decision (non-parametric) for "one", "three", "five" and then combine these preliminary decisions to form a final answer. Clearly claim 31 is allowable over the prior art.

22(Amended). A speaker verification method comprising the steps of:

(a) generating a code book covering a plurality of speakers having a plurality of training utterances for each of the plurality of speakers, wherein a first utterance of the plurality of training utterances is not the same as a second utterance of the plurality of training utterances;

(b) receiving a plurality of test utterances from one of the plurality of speakers, wherein a first of the plurality of test utterances is not the same as a second of the plurality of test utterances;

(c) comparing each of the plurality of test utterances to each of the plurality of training utterances for the speaker to form a plurality of preliminary decisions, one preliminary decision of the plurality of preliminary decisions for each of the plurality of test utterances, wherein the one preliminary decision is either a true or a false decision; and

(d) combining the plurality of preliminary decisions to form a verification decision.

Prompt reconsideration and allowance of the application are respectfully requested.

Respectfully submitted,

(Bossemeyer, Jr. et al.)

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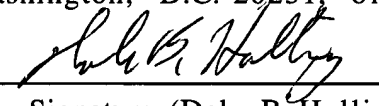
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